

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "23". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Cup-Shaped Ultrasonic Transducer for a Flowmeter".

Claim Objections

Claims 16 and 25 are objected to because of the following informalities:

Claim 16 recites the limitation "the plane of symmetry" in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, the limitation will be read as "a plane of symmetry".

Claim 25 recites the limitation "said element" in 3. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, the limitation will be read as "said roof element". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to Claim 25, the disclosure fails to teach an embodiment of the invention wherein a plurality of roof elements are utilized at once. Applicant is reminded that an apparatus must be claimed as it exists at one point in time. The applicant appears to be claiming a product by process (wherein parts are interchanged); however the claim has not been written in such a manner. Furthermore no drawing has been provided of this embodiment, or of the roof elements of varying thicknesses.

With respect to Claim 26, the disclosure fails to teach an embodiment of the invention wherein media of different densities and a potting compound are used to fill the chamber above the roof element. The specification teaches one or the other. In what manner would the two be combined together? Furthermore no drawing is provided of said media.

No prior art rejection is appropriate for Claims 25 and 26, due to the unclear nature of the claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "said roof element" in 2. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to what this roof element is or where it is located in the device. It is suggested that Claim 25 depend on Claim 18 in order to provide sufficient antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14-18, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Klass et al. (EP 1315144).

With respect to Claims 14, 16, and 24, Klass et al. disclose a device (see Abstract) comprising:

a cup-shaped ultrasonic sensor/transducer for use in a flowmeter for a fluid (See Figs. 8-9, for the pipe & the fluid is taught to be two different media: liquid or gaseous);
a control/evaluation unit for determining flow of the fluid based on a travel time difference of the ultrasonic measuring signals or on the basis of the Doppler shift (wherein a flow determining unit must be present in the mass flowmeter & ultrasonic flowmeters work either according to the Doppler principle or according to the travel time difference principle);
the sensor including a housing (see Figs. 1, 3, and 9), an oscillatable unit comprising: a piezoelectric unit (#2) and two electrodes (#s 9,8, wherein the electrodes are read as the roof and floor elements, respectively), an imaginary node plane that is perpendicular to the radiating/receiving direction of the ultrasonic signals (see Fig. 2 for the signal direction);
a portion of an outer surface of the oscillatable unit is connected to the housing in the region of the node plane (Figs. 1, 3, 5, 11, and 12, wherein a portion of #8 forms a membrane connected to the housing).

With respect to Claim 15, 17, 18, Klass et al. discloses the oscillatable membrane being symmetric about the node plane (Fig. 9, wherein the imaginary node plane dissects the piezoelectric element in half & the ring-shaped membrane, #19, connects the oscillatable unit to

the housing and lies in the plane of symmetry), wherein the roof element (#9) and floor element (#8) are arranged symmetrically on both surfaces (delimiting) of the piezoelectric disk (#2).

With respect to Claim 19, Klass et al. disclose electrodes provided in a predetermined region of the two delimiting surfaces (Fig. 1, #s 5 & 6).

With respect to Claim 21, Klass et al. teach a ring-shaped chamber provided in an edge region of the oscillatable unit (see Fig. 1, #22).

Allowable Subject Matter

Claims 20, 22, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PUNAM PATEL whose telephone number is (571)272-6794. The examiner can normally be reached on Monday to Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward Lefkowitz/
Supervisory Patent Examiner, Art Unit 2855

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